IN THE CLAIMS

Please amend the claims as follows:

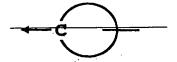
Claim 1 (Currently Amended): A sulfonyl derivative represented by the following formula (I):

$$Q^{1}-Q^{2}-T^{1}-Q^{3}-SO_{2}-Q^{A}$$
 (I)

wherein Q¹ represents a <u>dicyclic fused ring</u>; <u>substituted or unsubstituted saturated or</u> <u>substituted or unsubstituted unsaturated 5- or 6-membered cyclic hydrocarbon group</u>, a <u>substituted or unsubstituted saturated or substituted or unsubstituted unsaturated 5- or 6-membered heterocyclic group</u>, a <u>substituted or unsubstituted saturated or substituted or unsubstituted or unsaturated or unsaturated or unsaturated or unsaturated tricyclic fused ring group</u>;

 Q_2 represents a single <u>bond</u>; <u>bond</u>, an oxygen atom, a sulfur atom, a linear or branched C_{1-6} alkylene group, a linear or branched C_{2-6} alkenylene group, a linear or branched C_{2-6} alkynylene group,

a group N(R¹) CO (in which R¹ represents a hydrogen atom or an alkyl group),
a group N(R²) (CH₂)_m (in which R² represents a hydrogen atom or an alkyl group
and m stands for an integer of 0 to 6), or a group of the following formula:



(which represents a divalent, substituted or unsubstituted saturated or substituted or unsubstituted unsaturated 5 or 6 membered cyclic hydrocarbon group,

a divalent, saturated substituted or unsubstituted or unsaturated substituted or unsubstituted or unsubstituted 5- or 6-membered heterocyclic group, or a divalent, substituted or unsubstituted saturated or substituted or unsubstituted unsaturated dicyclic fused ring group, and wherein ←C means the bonding of the carbon atom of this group to Q¹),

Q³ represents any one of the following groups:

(in which, when the carbon atom to which each of R³, R⁴, R⁵, R⁶, R⁷, R⁸, R¹⁰ and R¹¹ has been bonded is not adjacent to a nitrogen atom, R³, R⁴, R⁵, R⁶, R⁷, R⁸, R¹⁰ and R¹¹ each independently represents a hydrogen atom,

a hydroxyl group,

an alkyl group,

an alkoxyl group,

an alkoxyalkyl group,

an alkoxyalkyloxy group,

a hydroxyalkyl group,

a hydroxyalkyloxy group,

a hydroxyalkylcarbonyl group,

a hydroxyalkylsulfonyl group,

a formyl group,

a formylalkyl group,

a formylalkylcarbonyl group,

a formylalkylsulfonyl group,

an alkylcarbonyl group, an alkylsulfonyl group, an alkylcarbonylalkyl group, an alkylsulfonylalkyl group, a carboxyl group, a carboxyalkyl group, a carboxyalkyloxy group, a carboxyalkylcarbonyl group, a carboxyalkylsulfonyl group, a carboxyalkylcarbonylalkyl group, a carboxyalkylsulfonylalkyl group, an alkoxycarbonyl group, an alkoxycarbonylalkyl group, an alkoxycarbonylalkyloxy group, an alkoxycarbonylalkylcarbonyl group, an alkoxycarbonylalkylcarbonyl group,

a substituted or unsubstituted an amino group,

a substituted or unsubstituted an aminoalkyl group, wherein substitutions occur at the amino moiety thereof,

a substituted or unsubstituted an aminoalkyloxy group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminoalkylcarbonyl group, wherein substitution occurs at the amino moiety thereof, one or two substituents,

a substituted or unsubstituted an aminoalkylcarbonyloxy group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminocarbonyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminocarbonylalkyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminocarbonylalkyloxy group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an alkylsulfonylaminocarbonylalkyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an arylsulfonylaminocarbonyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminosulfonylalkyl group, wherein substitution occurs at the amino moiety thereof,

a cyanoalkyl group,

a substituted or unsubstituted an alkoxyalkylaminocarbonylalkyl group, substitution occurs at the amino moiety thereof, or

a group A¹-B¹- wherein (in which A¹ represents a substituted or unsubstituted saturated or substituted or unsubstituted an unsaturated 5- or 6-membered cyclic hydrocarbon group or a substituted or unsubstituted saturated or substituted or unsubstituted unsaturated 5- or 6-membered heterocyclic group which may have a substituent and B¹ represents a single bond, a carbonyl group, an alkylene group, a carbonylalkyl group, a group -O-C₁₋₆ alkylene, a group -COO-C₁₋₆ alkylene, a group -NHCO- or a group -NHCO- (C₁₋₆ alkylene) group,

when the carbon atom to which each of R³, R⁴, R⁵, R⁶, R⁷, R⁸, R¹⁰ and R¹¹ has been bonded is adjacent to a nitrogen atom, R³, R⁴, R⁵, R⁶, R⁷, R⁸, R¹⁰ and R¹¹ each independently represents

- a hydrogen atom,
- an alkyl group,
- a hydroxyalkyl group,
- a hydroxyalkylcarbonyl group,
- a hydroxyalkylsulfonyl group,
- a formyl group,
- a formylalkyl group,
- a formylalkylcarbonyl group,
- a formylalkylsulfonyl group,
- an alkylcarbonyl group,
- an alkylsulfonyl group,
- an alkylcarbonylalkyl group,
- an alkylsulfonylalkyl group,
- a carboxyl group,
- a carboxyalkyl group,
- a carboxyalkylcarbonyl group,
- a carboxyalkylsulfonyl group,
- a carboxyalkylcarbonylalkyl group,
- a carboxyalkylsulfonylalkyl group,
- an alkoxyalkyl group,
- an alkoxycarbonyl group,
- an alkoxycarbonylalkyl group,
- an alkoxycarbonylalkylcarbonyl group,
- an alkoxycarbonylalkylsulfonyl group,

a substituted or unsubstituted an aminoalkyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminoalkylcarbonyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminocarbonyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminocarbonylalkyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an alkylsulfonylaminocarbonylalkyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an arylsulfonylaminocarbonyl group, wherein substitution occurs at the amino moiety thereof,

a substituted or unsubstituted an aminosulfonylalkyl group, wherein substitution occurs at the amino moiety thereof,

a cyanoalkyl group,

a substituted or unsubstituted an alkoxyalkylaminocarbonylalkyl group, wherein substitution occurs at the amino moiety thereof,

an alkylcarbonyloxyalkyl group, or

a group A²-B²- wherein (in which A² represents a substituted or unsubstituted saturated or substituted or unsubstituted unsaturated 5- or 6-membered cyclic hydrocarbon group or a saturated or unsaturated 5- or 6-membered heterocyclic group, and B² represents a single bond, a carbonyl group, an alkylene group, a carbonylalkyl group, a group -O- C₁₋₆ alkylene group, a group -NHCO- or a group -NHCO-C₁₋₆ alkylene group, group),

each of R³ and R⁴, R⁵ and R⁶, R⁷ and R⁸, and R¹⁰ and R¹¹ may be coupled together with a carbon atom which constitutes the ring and represent a substituted or unsubstituted saturated or substituted or unsubstituted unsaturated 5- to 7-membered cyclic hydrocarbon group or a saturated or substituted or unsubstituted unsaturated 5- to 7-membered heterocyclic group, R⁹ and R¹² each independently represents:

a hydrogen atom, an alkyl group, a hydroxyalkyl group, a hydroxyalkylcarbonyl group, a hydroxyalkylsulfonyl group, an alkoxyl group, an alkoxyalkyl group, an alkoxyalkylcarbonyl group, an alkoxyalkylsulfonyl group, a formyl group, a formylalkyl group, a formylalkylcarbonyl group, a formylalkylsulfonyl group, an alkylcarbonyl group, an alkylcarbonylalkyl group, an alkylsulfonyl group, an alkylsulfonylalkyl group, a carboxyalkyl group, a carboxyalkylcarbonyl group, a carboxyalkylsulfonyl group,

a carboxyalkylcarbonylalkyl group,

a carboxyalkylsulfonylalkyl group,

an alkoxycarbonyl group,

an alkoxycarbonylalkyl group,

an alkoxycarbonylalkylcarbonyl group,

an alkoxycarbonylalkylsulfonyl group,

a substituted amino group having one or two substituents,

a substituted or unsubstituted an aminoalkyl group, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an aminoalkyloxy group, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an aminoalkylcarbonyl group, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an aminoalkyloxycarbonyl, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an aminocarbonyl group, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an aminocarbonylalkyl group, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an aminocarbonyloxyalkyl group, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an alkylsulfonylaminocarbonylalkyl group, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an arylsulfonylaminocarbonyl group, wherein substitution occurs, at the amino moiety thereof,

a substituted or unsubstituted an aminosulfonylalkyl group, wherein substitution occurs, at the amino moiety thereof,

a cyanoalkyl group, or

a substituted or unsubstituted an alkoxyalkylaminocarbonylalkyl group; wherein substitution occurs, at the amino moiety thereof,

R⁹ and R⁷ or R⁸ may be coupled together with a carbon atom constituting the ring and a nitrogen atom to which R⁹ has been bonded and represent a substituted or unsubstituted saturated or a substituted or unsubstituted an unsaturated 5- to 7-membered heterocyclic group;

R¹² and R¹⁰ or R¹¹ may be coupled together with a carbon atom constituting the ring and a nitrogen atom to which R¹² has been bonded and represent a substituted or unsubstituted or unsubstituted an unsaturated 5- to 7-membered heterocyclic group,

a, b, d, e and g each independently stands for an integer of 0 or 1, c stands for an integer of 0, 1, or 3, c stands for an integer 2 when a equals 0 and b equals 1 or when a equals 1 and b equals 0; and f, h and i each independently represents an integer of 1 to 3, with the proviso that the sum of a, b and c stands for an integer of 2 or 3, the sum of d and e stands for an integer of 0 or 1 and the sum of f, g and h stands for an integer of 3 to 5),

Q^A represents a substituted or unsubstituted an arylalkenyl group, a substituted or unsubstituted heteroarylalkenyl group, which may have a substitutent, a saturated or unsaturated dicyclic fused ring group, a substituted or unsubstituted saturated or substituted or unsubstituted an unsaturated tricyclic fused ring group, a group Ar-C(H)=N- wherein (in which, Ar represents a substituted or unsubstituted an aryl group group), or a group HetC(H)=N- wherein (in which, Het represents a heteroaryl group, and

T¹ represents a carbonyl group,

wherein (in which R¹³ represents a hydrogen atom, an alkyl group, a hydroxyalkyl group having a protected or unprotected hydroxyl group-, an alkoxyalkyl group, a carboxyalkyl group, an alkoxycarbonylalkyl group, an aryl group, an aralkyl group, a heteroaryl group, a heteroarylalkyl group or a substituted or unsubstituted an aminoalkyl group, wherein substitution occurs, at the amino moiety thereof, or

wherein (in which R¹⁴ and R¹⁴ independently represent a hydrogen atom, an alkyl group, a carboxyalkyl group, an alkoxycarbonyl group, an aryl group, an aralkyl group, a heteroarylalkyl group or an aminoalkyl group which may have, at the amino moiety thereof, a <u>substituent</u>, <u>substituent</u>), or salt thereof; or a solvate thereof.

Claim 2 (Currently Amended): A sulfonyl derivative according to claim 1, wherein in the formula (I), Q^A represents any one of the following groups:

wherein R¹⁵ represents a hydrogen atom, a hydroxyl group, a nitro group, a cyano group, a halogen atom, an alkyl group, a hydroxyalkyl group, an alkoxyl group, an alkoxyalkyl group, a carboxyl group, a carboxyalkyl group, an alkylcarbonyl group, an alkoxycarbonyl group, an alkoxycarbonylalkyl group, an alkylcarbonyloxy group or a group A³-B³-

wherein (wherein-A³ represents an amino group having one or two substituents, a substituted or unsubstituted saturated or a substituted or unsubstituted an unsaturated 5- or 6-membered cyclic hydrocarbon group or a substituted or unsubstituted saturated or a

substituted or unsubstituted an unsaturated 5- or 6-membered heterocyclic group and B³ represents a single bond, a carbonyl group, an alkylene group, a carbonylalkyl group, a carbonylalkyloxy group or an alkylenecarbonyloxy group, group),

 R^{16} and R^{17} each independently represents a hydrogen atom, a halogen atom, an alkyl group, a hydroxyalkyl group having a protected or unprotected hydroxyl group or an alkoxyalkyl group, or R^{16} or R^{17} may be coupled together with R^{15} and represent a C_{1-3} alkylene or alkenylene group,

R¹⁸ and R¹⁹ each independently represents a hydrogen atom, a hydroxyl group, a halogen atom, a halogenoalkyl group, an alkyl group, an alkoxyl group, an alkenyl group, an alkynyl group an alkynyl group having an alkylsilyl group, a trifluoromethyl group, a cyano group, an amino group, an aminoalkyl group, an alkylaminoalkyl group, an amidino group, a hydroxyamidino group or an alkoxycarbonylamidino group, with the proviso that R¹⁸ and R¹⁹ do not represent a hydrogen atom at the same time, time), and

 X^1 and X^2 each independently represents a methine group or a nitrogen atom

$$\begin{array}{c|c} X_{4} & X_{2} & X_{6} \\ \hline & X_{3} & X_{8} & X_{4} \end{array}$$

wherein X³ represents a nitrogen atom, or

a group =
$$C(R^{100})$$

wherein (wherein-R¹⁰⁰ represents a hydrogen atom, a halogen atom, an alkyl group, an alkoxycarbonyl group, an aralkyloxycarbonylalkyl group, an alkoxycarbonylalkyl group, a nitro group, a protected or unprotected amino group which may have a protecting group or a protected or unprotected aminoalkyl group,

X⁴ represents an oxygen atom, a sulfur atom or-a group -N(R¹⁰¹)-

wherein (wherein-R¹⁰¹ means a hydrogen atom, an alkyl group, an alkoxycarbonyl group, an aralkyloxycarbonyl group, an alkoxycarbonylalkyl group, an alkylsulfonyl group or an arylsulfonyl group, group),

 X^5 and X^8 each independently represents a nitrogen atom or a group -C(R^{102})wherein (wherein- R^{102} represents a hydrogen atom or a halogen atom, atom), X^6 and X^7 each independently represents a nitrogen atom or a group -C(R^{103})-

wherein (wherein-R¹⁰³ represents a hydrogen atom, a hydroxyl group, a halogen atom, a halogenoalkyl group, an alkyl group, an alkoxyl group, an alkenyl group, an alkynyl group which may be substituted by an alkylsilyl group as a protecting group, a cyano group, an amino group, an aminoalkyl group, an alkylaminoalkyl group, an amidino group, a hydroxyamidino group or an alkoxycarbonylamidino group group)

$$-N = X_{0} \times X_{10}$$

wherein X^9 and X^{12} each independently represents a nitrogen atom or a group -C(R^{104})
wherein (wherein R^{104} represents a hydrogen atom or a halogen atom, atom), X^{10} and X^{11} each independently represents a nitrogen atom or a group -C(R^{105})-

wherein (wherein R¹⁰⁵ represents a hydrogen atom, a hydroxyl group, a halogen atom, a halogenoalkyl group, an alkyl group, an alkoxyl group, an alkenyl group, an alkynyl group which may be substituted by an alkylsilyl group as a protecting group, a cyano group, an

amino group, an aminoalkyl group, an alkylaminoalkyl group, an amidino group, a hydroxyamidino group or an alkoxycarbonylamidino group, and

w and z each independently represents an integer of 1 or 2, or salt thereof; or a solvate thereof.

Claim 3 (Previously Presented): A sulfonyl derivative according to claim 2, wherein in the formula (I), the group:

means the following group:

or

in the above formulas, R^{16} , R^{18} , R^{19} , X^1 and X^2 have the same meanings as defined above, or salt thereof; or a solvate thereof.

Claim 4 (Previously Presented): A sulfonyl derivative according to claim 2, wherein R¹⁸ represents a halogen atom or an ethynyl group, or salt thereof; or a solvate thereof.

Claim 5 (Previously Presented): A sulfonyl derivative according to claim 2, wherein in the formula (I), the group:

means any one of the following groups:

in the above formulas, R^{101} and R^{103} have the same meanings as defined above and $R^{103'}$ represents similar atoms or groups to R^{103} , or salt thereof; or a solvate thereof.

Claim 6 (Original): A sulfonyl derivative according to claim 5, wherein either one of R^{103} and $R^{103'}$ represents a halogen atom or an ethynyl group, or salt thereof; or a solvate thereof.

Claim 7 (Previously Presented): A sulfonyl derivative according to claim 2, wherein in the formula (I), the group:

$$-N \bigvee_{z}^{w} X^{12} \times X^{11}$$

represents the following group:

wherein R^{105} has the same meaning as defined above and $R^{105'}$ represents similar atoms or groups to R^{105} , or salt thereof; or a solvate thereof.

Claim 8 (Original): A sulfonyl derivative according to claim 7, wherein either one of R^{105} or $R^{105'}$ represents a halogen atom or an ethynyl group, or salt thereof; or a solvate thereof.

Claim 9 (Previously Presented): A sulfonyl derivative according to claim 1, wherein Q^3 represents the group:

$$\begin{array}{c|cccc}
R^3 & R^4 \\
-N & N - \\
\begin{pmatrix} 0 & & & \\ & & &$$

wherein R^3 , R^4 , a, b and c have the same meanings as defined above or salt thereof; or a solvate thereof.

Claim 10 (Currently Amended): A sulfonyl derivative according to claim 1, wherein T¹ represents a carbonyl group or a group -CH (R¹³) – wherein (wherein-R¹³ has the same meaning as defined above. above).

Claim 11 (Currently Amended): A sulfonyl derivative according to claim 1, wherein Q1 represents a eyelopentyl-group, a substituted or unsubstituted cyclohexyl group, a substituted or unsubstituted cyclopentenyl group, a substituted or unsubstituted cyclohexenyl group, a substituted or unsubstituted phenyl group, a substituted or unsubstituted pyrrolidinyl group, a substituted or unsubstituted piperidinyl group, a substituted or unsubstituted imidazolyl group, a substituted or unsubstituted thiazolyl group, a substituted or unsubstituted thiadiazolyl group, a substituted or unsubstituted pyridyl group, a substituted or unsubstituted pyrimidinyl group, a substituted or unsubstituted pyridazinyl group, a substituted or unsubstituted thiazolydinyl group, a substituted or unsubstituted morpholinyl group, a substituted or unsubstituted piperazinyl group, a substituted or unsubstituted thiomorpholinyl group, a substituted or unsubstituted pyrrolyl group, a substituted or unsubstituted thienyl group, a substituted or unsubstituted furanyl group, a substituted or unsubstituted tetrahydropyrimidinyl group, a substituted or unsubstituted tetrahydrofuranyl group, a substituted or unsubstituted tetrahydrothienyl group, a substituted or unsubstituted sulforanyl group, a substituted or unsubstituted imidazolinyl group, a substituted or unsubstituted thiazolinyl group, a substituted or unsubstituted oxazolyl group, a substituted or unsubstituted oxadiazinyl group, a substituted or unsubstituted triazinyl group, a substituted or unsubstituted tetrazinyl group, a substituted or unsubstituted pyrazinyl group, a substituted or unsubstituted pyrazolyl group, a substituted or unsubstituted pyrazolinyl group, a substituted or unsubstituted pyrazolidinyl group, a substituted or unsubstituted thienopyridyl group, a substituted or unsubstituted tetrahydrothienopyridyl group, a substituted or unsubstituted

thiazolopyridyl group, a substituted or unsubstituted tetrahydrothiazolopyridyl group, a substituted or unsubstituted dihydropyranothiazolyl group, a substituted or unsubstituted thiazolopyridadinyl group, a substituted or unsubstituted or unsubstituted tetrahydrothiazolopyridadinyl group, a substituted or unsubstituted or unsubstituted or unsubstituted tetrahydrothiazolopyridadinyl group, a substituted or unsubstituted tetrahydrofuropyridyl group, a substituted or unsubstituted or unsubstituted or unsubstituted or unsubstituted tetrahydrofuropyridyl group, and a substituted or unsubstituted tetrahydrooxazolopyridyl group.

Claims 12-16 (Canceled).

Claim 17 (Original): A pharmaceutical composition comprising a sulfonyl derivative or salt thereof, or a solvent thereof as claimed in any one of claims 1 to 11, and a pharmaceutically acceptable carrier.

Claims 18-22 (Cancelled).

Claim 23 (Previously Presented): A method for reducing the activity of an activated coagulation factor X, which comprises administering an effective amount of the sulfonyl derivative, salt thereof, or the solvate thereof as claimed in any one of claims 1 to 11 to a subject.

Claim 24 (Previously Presented): A treating method for coagulation inhibition, which comprises administering an effective amount of the sulfonyl derivative, salt thereof, or the solvate thereof as claimed in any one of claims 1 to 11 to a subject.

Claim 25 (Previously Presented): A treating method of thrombosis which comprises administering an effective amount of the sulfonyl derivative, salt thereof, or the solvate thereof as claimed in any one of claims 1 to 11 to a subject.

Claim 26 (Previously Presented): A treating method for treating a condition selected from the group consisting of cerebral infarction, cerebral embolism, myocardial infarction, pulmonary infarction, pulmonary embolism, Buerger's disease, deep vein thrombosis, disseminated intravascular coagulation syndrome, thrombus formation after valve replacement, reocclusion after revascularization, formation of thrombus upon extracorporeal circulation and coagulation upon blood collection, which comprises administering an effective amount of the sulfonyl derivative, salt thereof, or the solvate thereof as claimed in any one of claims 1 to 11 to a subject.

DISCUSSION OF AMENDMENT

Claims 1-11, 17, and 23-26 are pending.

Claims 1-2 and 10-11 are amended.

Claims 1-2 and 10-11 are amended to improve readability by deleting the terms "substituted or unsubstituted."

Claim 1 is amended to limit Q^1 to represent a dicyclic fused ring. Claim 11 is amended in order to reflect the limitation of Q^1 in Claim 1.

No new matter is believed to be added upon entry of the amendment.

Upon entry of the amendment Claims 1-11, 17, and 23-26 are pending.